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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,876	07/07/2003	John C. Jones	527122000300	6966

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EXAMINER

DINH, DUC Q

ART UNIT PAPER NUMBER

2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/612,876	Applicant(s) JONES ET AL.	
	Examiner DUC Q. DINH	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under second paragraph of 35 U.S.C. 112

2. Regarding claims 1, the negative limitation “the area of the second separable addressable sub-pixel is not substantially a multiple of the area of the first separable addressable sub-pixel” renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

The examiner examines the Application based on the best understood of the claimed language.

Claim Objections

3. Claim 11 is objected to because of the following informalities: “the following [[:]]”, in line 2 should read “the following[[:]”], i.e. semi colon to colon punctuation marks.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Silverbrook et al. (U.S Patent No. 5,805,136), hereinafter Silverbrook.

In reference to claim 1 (AAPA: page 21) discloses a light modulating device (Figs 11) having at least one pixel comprising a plurality of separable addressable sub-pixels of different areas and wherein the area of a first separately addressable sub-pixel (1) is smaller than a area of a second separately addressable sub-pixel (4) wherein the first and second sub-pixels each have an equal number of selectable transmission/reflection levels, said number of selectable transmission/reflection levels being more than two, the device further comprising an addressing means (Fig. 2) for selectively addressing the sub-pixels so as to select any one of more than two transmission/reflection levels (AAPA page 21, lines 16-25).

Accordingly, AAPA discloses everything except the area of the second sub-pixel is not substantially a multiple of the area of the first separately addressable sub-pixel.

Silverbrook discloses a display device comprising a plurality of pixels. Each pixel comprising plurality of sub-pixels whose values is not substantially a multiple area of the other sub-pixels, i.e. Figs 16 area [57, 56, 59 = 6 units] and area 58, 60 and 61=8 units; col. 6, lines 39-50) (also see Figs. 1-2 shows pixel 1 having sub pixel area (3,4,5) having 7 units and sub pixel area (2) having 8 units area (col. 3 lines 15-25, see also Figs 3-4 col. 4, lines 35)

It would have been obvious for one of ordinary skill in the art at the time of the invention to modified the ratio of the sub-pixel areas with areas is not substantially a multiple area of other

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sub-pixels in the device of AAPA in view of the teaching of to display a multiplicity of discrete levels of increasing intensity by means of a corresponding series of independently illuminable areas, wherein the illuminable areas of the more intense members of said series are interfused amongst one another (col. 2, lines 8-13 of Silverbrook).

In addition, **absent a showing of criticality** and/or unexpected results, it would been obvious to one having ordinary skill in the art change the size of the sub-pixels as desired as was judicially recognized with IN RE ROSE, 105 USPQ 237 (CCPA 1955) which recognizes that the change in size or range of well known elements, i.e. sub-pixels, is normally not directed toward patentable object matter.

In reference to claim 2, the AAPA discloses the addressing means is adapted to address each sub-pixel with any one of a predetermined set of addressing waveforms (Figs. 1, 3).

In reference to claims 3 and 4, the AAPA discloses each sub-pixel of a divided pixel can be sub-divided area, i.e. latching regions, with different latching thresholds and are adapted to exhibit the same number of partial latching level (page 4, lines 11-24) and Silverbrook discloses sub-pixel can be subdivided in different latching regions as shown in Fig. 1-4 and 10-16)

In reference to claim 5, AAPA discloses the area of the second separately addressable sub-pixel has the next largest area to the first addressable sub-pixel (Fig. 11, the second sub-pixel [4 areas]) has the next largest area to the first sub-pixel also see Fig. 1 and 2 of Silverbrook).

In reference to claims 6 and 7, refer to the rejection as applied to claim 1 and Figs 1-4, and 6-10 of Silverbrook for the limitation the area of each separately addressable sub-pixel is not multiple area of the next smallest separately addressable sub-pixel.

In reference to claim 8, the AAPA discloses the latching regions adapted such that, in certain conditions, partial latching of a latching region can occur (after blanking level the pixel into one stable state and intermediate voltage is applied; page 1, lines 31-34).

In reference to claim 9, the AAPA discloses the ratio of the addressable sub-pixels is chosen so that there is no redundant grey levels when operating conditions that allow partial latching and also when operating conditions that do not allow partial latching (at least two of the bits are addressed with more than two grey levels, i.e. more than just black and white transmission/reflection, and at least one bit is address lesser number of grey level, i.e. there is no redundant grey levels; (page 2, line 32-col. 3, line 2) and bipolar pulse are required to prevent unwanted latching effects due to a net DC across the pixel, i.e.: not allow partial latching).

In reference to claim 10, AAPA discloses in Fig. 11, there are only two addressable sub-pixels and Fig. 1 and 2 of Silverbrook show only two addressable sub-pixels as shown in Figs 1 and 2.

In reference to claim 12, the AAPA discloses the device is a zenithal bistable liquid crystal display as claimed.

Response to Arguments

6. Applicant's arguments with respect to the Art Rejection as applied to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection. Furthermore, with respect to the 112 Rejection (see page 7 of the Remarks), it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The drawing

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objection is withdrawn due to the new submitted drawing with the label to the objected Figures and for the reason in pages 8-9 of the Remarks.

Allowable Subject Matter

7. Claim 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

None of the recited arts teaches or suggests “the ratio of the areas of the first and second addressable is chosen from the following: $2:2n+1$, $n:2n+1$ or $n+1:2n+1$ ”.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q. DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH
Examiner
Art Unit 2629



DQD
April 25, 2007